

Appln. No. 10/723,797  
Amendment dated December 17, 2004  
Reply to Office Action of September 22, 2004

REMARKS/ARGUMENTS

Reconsideration of the present application, as amended, is respectfully requested.

The September 22, 2004 Office Action and the Examiner's comments have been carefully considered. In response, the claims are amended and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

CLAIM AMENDMENT

The preamble of claim 1 is amended to correct a grammatical error. The amendment is not related to the patentability of the claims.

REJECTION UNDER 35 USC 112

In the Office Action claims 1-5 are rejected under the second paragraph of 35 USC 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In response, claim 1 (lines 10-11) is amended in a sincere effort to more clearly comply with the requirements of 35 USC 112.

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In the indefiniteness rejection the Examiner states that it is unclear what the phrase "spring force-increasing means" refers to in claim 1. In response, Applicants respectfully state that the spring force-increasing means corresponds, in the first embodiment to the stepped portion 119, in the second embodiment to the protrusion 400, and in the third embodiment to the ring 500.

In view of the amendment of claim 1 and the foregoing remarks, reconsideration and withdrawal of the rejection of claims 1-5 under the second paragraph of 35 USC 112 are respectfully requested.

PRIOR ART REJECTIONS

In the Office Action claim 1 is rejected under 35 USC 102(b) as being anticipated by US 20020019161 (Finke et al.). Claims 2, 3 and 5 are rejected under 35 USC 103 as being unpatentable over Finke et al. in view of USP 5,653,606 (Chrysostomou). Claim 4 is rejected under 35 USC 103 as being unpatentable over Finke in view of Chrysostomou, and further in view of USP 6,352,444 (Yuzawa).

The present claimed invention as defined by independent claim 1 is directed to a connector for connection to a mating connector having a recess. The connector includes a housing and

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a locking member provided on an outer peripheral surface of the housing. The locking member includes a fixed portion fixed to the housing, an engaging portion for engagement with the recess of the mating connector, and a spring portion for urging the engaging portion toward the recess. The connector also includes a spring force-increasing means for inhibiting the engaging portion from moving when the spring portion is bent by a predetermined quantity using the fixed portion as a support, and causing the spring portion to be bent using the engaging portion as a support.

The connector of the present claimed invention enables there to be a "click" when the connector is locked into the mating connector to ensure proper coupling.

US 20020019161 (Finke et al.) is directed to a circular connector having a first connector element that is a plug and a second connector element that is a socket or a housing adapter. Finke et al. teach a connector provided with a sliding support 17 for supporting free ends of latch flanges 14.

In the present claimed invention as defined by amended claim 1, the spring force-increasing means inhibits the engaging portion from moving when the spring portion is bent by a predetermined quantity using the fixed portion as a support. In contrast, in Finke et al. the sliding support 17 supports the

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free ends of the latch flanges 14 as soon as the connector is fitted to the mating connector (see paragraph 43 of Finke et al.). Therefore, Finke et al. do not disclose the spring force-increasing means as defined by claim 1.

Moreover, in the present claimed invention as defined by claim 1, the spring force-increasing means causes, after the engaging portion contacts the spring force-increasing means, the spring force of the spring portion to be sharply increased. As a result, it becomes relatively easy to predict a time at which the connector is locked into the mating connector.

In contrast to the present claimed invention, in Finke et al. the sliding support 17 supports the free ends of the latch flanges 14 as soon as the connector is fitted to the mating connector. In this configuration, the spring force of the latch flanges 14 increases approximately in proportion to the quantity by which the connector is pressed into the mating connector. Thus, a user of Finke et al. is unable to determine when the connector is locked into the mating connector.

That is, the present claimed invention as defined by amended claim 1 is patentable over Finke et al. because the reference does not disclose, teach or suggest a connector for connection to a mating connector having a recess, including:

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a spring force-increasing means for inhibiting said engaging portion from moving when said spring portion is bent by a predetermined quantity using said fixed portion as a support, and causing said spring portion to be bent using said engaging portion as a support (see claim 1, lines 10-14).

In the Office Action claims 2, 3 and 5 are rejected under 35 USC 103 as being unpatentable over Finke et al. in view of USP 5,653,606 (Chrysostomou).

Claims 2, 3 and 5 are patentable over the cited references in view of their dependence on claim 1 and because the references do not disclose, teach or suggest each of the limitations set forth in claims 2, 3 and 5.

In the Office Action claim 4 is rejected under 35 USC 103 as being unpatentable over Finke et al. in view of Chrysostomou, and further in view of USP 6,352,144 (Yuzawa). Claim 4 is patentable over the cited references in view its dependence on claim 1 and because the references do not disclose, teach or suggest each of the limitations set forth in claim 4.

In view of all the foregoing, claim 1 and claims 2-5 which are either directly or indirectly dependent on claim 1 are patentable over the cited references under 35 USC 102 as well as 35 USC 103.

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INFORMATION DISCLOSURE STATEMENT

An Information Disclosure Statement was filed with the Patent Office on March 15, 2004. A copy of the form PTO/SB/08A dated March 12, 2004 which was signed by the Examiner was returned with the September 22, 2004 Office Action. Upon reviewing the form PTO/SB/08A attached to the Office Action, Applicants have discovered that the Examiner did not initial the reference identified thereon. Applicants respectfully request that the Examiner return an initialed copy of the Form PTO/SB/08A dated March 12, 2004 with the next Patent Office communication to indicate that the reference identified thereon has been considered and made of record in this application.

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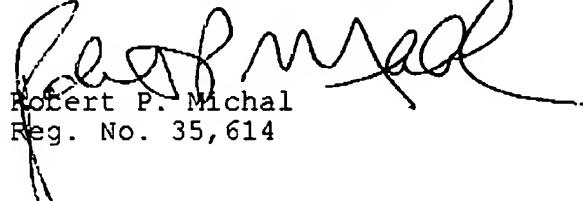
If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.

Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

  
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